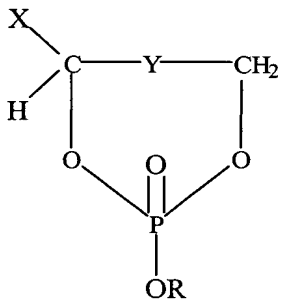
Amendments To The Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and, as an active ingredient, a compound of the general formula I:



(I)

wherein

Y is $-(CH_2)_m-$, -CH(OH)- or -C(=O)- , and m is 0 - 3;

X is H, alkyl, $-CH_2OH-$, CH_2Oacyl or $-CH_2$acyl; and

R is H, a cation, alkyl or optionally substituted aryl; provided that:

(a) When Y is $-(CH_2)_m-$, m=0, and R is H or cation, X is not CH_2Oacyl; and

(b) Said compound is not one of

(i) ~~Pheny-~~ Phenyl 1,3-cyclic propanediol phosphate,

(ii) ~~Pheny-~~ Phenyl 1,2-cyclic propanediol phosphate,

(iii) Cyclic dihydroxyacetone phosphate,

(iv) 1,3,-cyclic propanediol phosphate

(v) 1,3-cyclic glycerophosphate,

(vi) 1,2-cyclic propanediol phosphate,

(vii) 1,2-cyclic glycerophosphate.

2. (Previously Presented) A pharmaceutical composition according to Claim 1, wherein said alkyl groups have 1-24 carbon atoms, said acyl groups are aliphatic saturated or unsaturated C_1 - C_{24} acyl groups and said aryl group is a carbocyclic aryl group optionally substituted by C_1 - C_4 alkyl, halogen and/or hydroxy.

3. (Previously Presented) A pharmaceutical composition according to Claim 2, wherein said acyl groups are derived from natural fatty acids.

4. (Previously Presented) A pharmaceutical composition according to Claim 3, wherein said acyl group is a saturated aliphatic acyl group selected from acetyl, butyryl, caproyl, octanoyl, decanoyl, lauroyl, myristyl, palmitoyl and stearoyl, or an unsaturated aliphatic acyl group selected from palmitoleyl, oleyl, linoleyl, and ricinoleyl.

5. (Previously Presented) A pharmaceutical composition according to any one of Claims 1-4, wherein said aryl group is phenyl.

6. (Previously Presented) A pharmaceutical composition according to Claim 1, comprising phenyl 1,2-cyclic glycerophosphate.

7. (Previously Presented) A pharmaceutical composition according to Claim 1, comprising 3-acyl 1,2-cyclic glycerophosphate.

8. (Previously Presented) A pharmaceutical composition according to Claim 1, comprising cyclic oleyl lysophosphatidic acid.

9. (Previously Presented) A pharmaceutical composition according to Claim 1, comprising phenyl 1,3-cyclic glycerophosphate.

10. (Previously Presented) A pharmaceutical composition according to Claim 1, comprising phenyl cyclic dihydroxyacetone phosphate.

11. (Previously Presented) A pharmaceutical composition for inducing phosphorylation in intracellular proteins of target cells comprising a pharmaceutically acceptable carrier and, as an active ingredient, a compound of general Formula I of Claim 1.

12. (Previously Presented) A pharmaceutical composition comprising a pharmaceutically acceptable carrier

and, as an active ingredient, a compound of the general Formula I of Claim 1 for promotion of cell differentiation in target cells.

13. (Currently Amended) A pharmaceutical composition for the treatment of malignant diseases and disorders comprising a pharmaceutically acceptable carrier and, as an active ingredient, a compound of the general Formula I of Claim 1 wherein

Y is $-(CH_2)_m-$, -CH(OH)- or -C(=O)- , and m is 0 - 3;

X is H, alkyl, $-CH_2OH-$, CH_2Oacyl or - CH_2acyl; and

R is H, a cation, alkyl or optionally substituted aryl; provided that

when Y is $-(CH_2)_m-$, m=0, and R is H or cation, X is not CH_2Oacyl,

wherein said malignant disease or disorder is ~~one against which said compound provides an effective treatment~~ breast cancer or prostate cancer.

14. (Previously Presented) A pharmaceutical composition according to Claim 13, wherein said malignant disorder is a blood malignancy.

15. (Previously Presented) A pharmaceutical composition according to Claim 14, wherein said blood malignancy is leukemia.

16. (Previously Presented) A pharmaceutical composition according to Claim 13, wherein said malignancy is breast cancer.

17. (Currently Amended) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and, as an active ingredient, a compound as defined in Claim 1, for induction of ~~hormone-like signaling~~ insulin, human growth hormone or epidermal growth factor signaling.

18. (Previously Presented) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and, as an active ingredient, as defined in Claim 13, for induction of hormone-like signaling wherein said hormone is selected from the group consisting of insulin, human growth hormone, and epidermal growth factor.

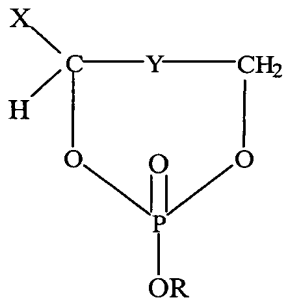
19. (Previously Presented) A pharmaceutical composition according to Claim 17 or 18 wherein said hormone is insulin and the composition is for the treatment of non-insulin-dependent diabetes mellitus (non-IDDM type II diabetes).

20. (Previously Presented) A pharmaceutical composition according to claim 17 or 18, wherein said hormone

is human growth hormone (HGH) for the treatment of disorders in which HGH is involved.

21. (Previously Presented) A pharmaceutical composition according to Claim 17 or 18, wherein said hormone is epidermal growth factor (EGF) for the treatment of disorders involving EGF.

22. (Currently Amended) A compound of the formula I:



(I)

wherein

Y is $-(CH_2)_m-$, -CH(OH)- or -C(=O)- , and m is 0 - 3;

X is H, alkyl, $-CH_2OH-$, CH_2Oacyl or $-CH_2$acyl; and

R is H, a cation, alkyl or optionally substituted aryl; provided that:

(a) when Y is $-(CH_2)_m-$, m=0, and R is H or cation, X is not CH_2Oacyl; and

(b) when R is phenyl, Y is not $-(CH_2)_m$, wherein m is 0-3; and said compound is not one of

~~(i) Phenyl 1,3-cyclic propanediol phosphate,~~

~~(ii) Phenyl 1,2-cyclic propanediol phosphate,~~

~~(iii)~~ (i) Cyclic dihydroxyacetone phosphate,

~~(iv)~~ (ii) 1,3,-cyclic propanediol phosphate

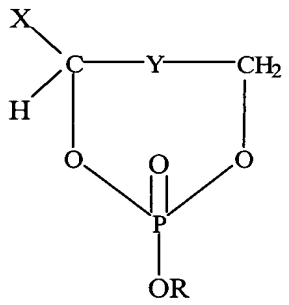
~~(v)~~ (iii) 1,3-cyclic glycerophosphate,

~~(vi)~~ (iv) 1,2-cyclic propanediol phosphate,

~~(vii)~~ (v) 1,2-cyclic glycerophosphate,

(vi) 2-methoxy-2-oxo-1,3,2-dioxaphospholane.

23. (Previously Presented) A compound of the formula I:



(I)

wherein

Y is $-(CH_2)_m-$, -CH(OH)- or -C(=O)- , and m is 0 - 3;

X is H, alkyl, $-CH_2OH-$, CH_2Oacyl or $-CH_2$acyl; and

R is H, a cation, alkyl or optionally substituted aryl;

provided that when Y is $-(CH_2)_m-$, m=0, and R is H or cation, X is not CH_2Oacyl; with the exception of the following compounds:

(i) compounds wherein Y is $-(CH_2)_m-$, m is 0, X is CH_3, $-CH_2OH$ or CH_2Oacyl wherein acyl is a saturated carboxylic acyl with more than 12 carbon atoms, and R is H or a cation;

(ii) compounds wherein Y is $-(CH_2)_m-$, m is 1, X is H and R is H , a cation or phenyl; and

(iii) compounds wherein Y is -CH(OH)- , X is H and R is H, a cation or phenyl.

24. (Previously Presented) A compound according to Claim 22, selected from the group consisting of:

(i) phenyl 1,2 cyclic glycerophosphate;

(ii) phenyl cyclic dihydroxyacetone phosphate; and

(iii) cyclic oleyl lysophosphatidic acid.

25. (Currently Amended) A method for treatment of ~~disorders and diseases~~ breast cancer or blood malignancy ~~which can be treated by phosphorylation of intracellular proteins~~ comprising administering to the individual in need a therapeutically effective amount of a compound as defined in Claim 23.

26. (Currently Amended) A method for treatment of breast cancer or prostate cancer ~~disorders and disease which can be treated by phosphorylation of intracellular proteins~~ comprising administering to the individual in need a therapeutically effective amount of a compound as defined in claim 22.

27. (Currently Amended) A method for the treatment of ~~malignant diseases~~ breast cancer or prostate cancer

comprising administering to an individual in need a therapeutically effective amount of a compound as defined in claim 23.

28. (Previously Presented) A method according to Claim 27, wherein said malignant disease or disorder is blood malignancy.

29. (Previously Presented) A method according to Claim 28, wherein said blood malignancy is leukemia.

30. (Previously Presented) A method according to Claim 27, wherein said malignant disease is breast cancer.

31. (Currently Amended) A method for the treatment of diseases involving insulin, human growth hormone or epidermal growth factor ~~hormone like~~ signaling, comprising administering to an individual in need a therapeutically effective amount of a compound as defined in Claim 23.

32. (Previously Presented) A method for the treatment of diseases involving insulin, human growth hormone or epidermal growth factor ~~hormone like~~ signaling comprising administering to an individual in need a therapeutically effective amount of a compound as defined in claim 22.

33. (Previously Presented) A method according to Claim 31 or 32, wherein said hormone is insulin and the disease treated is non-IDDM type II diabetes.

34. (Previously Presented) A method according to Claim 31 or 32, wherein said hormone is human growth hormone (HGH) and the diseases treated are disorders in which HGH is involved.

35. (Previously Presented) A method according to Claim 31 or 32, wherein said hormone is epidermal growth factor (EGF) and the diseases treated are disorders involving EGF.

36. (Currently Amended) A method for detecting abnormal conditions of a tested cell for breast cancer or blood malignancy, comprising:

(i) contacting the cells with cyclic glycerophosphates or their analogs (herein CGs) as defined in Claim 13;

(ii) detecting the level of phosphorylation in intracellular proteins of the tested cells; and

(iii) comparing said level of phosphorylation to the level of phosphorylation in intracellular proteins of normal cells following contact with said CGs, a level of phosphorylation differing from that

detected in the normal cells indicating a high probability of abnormality in the tested cells.

37. (Currently Amended) A method for detecting abnormal conditions of a tested cell for breast cancer or prostrate cancer, comprising:

(i) contacting the cells with cyclic glycerophosphates or their analogs (herein CGs) as defined in Claim 13;

(ii) detecting the level of phosphorylation in intracellular proteins of the tested cells; and

(iii) comparing said level of phosphorylation to the level of phosphorylation in intracellular proteins of normal cells following contact with said CGs, a level of phosphorylation differing from that detected in the normal cells indicating a high probability of abnormality in the tested cells, wherein said compound is as defined in claim 1.

38-44. (Canceled)

45. (Currently Amended) A pharmaceutical composition comprising a pharmaceutically acceptable carrier and, as active ingredient, the compound of ~~claim 44~~ claim 1, wherein m is 1-3.

46. (Currently Amended) A method for treatment of ~~disorders and diseases~~ prostate cancer or breast cancer, ~~which can be treated by phosphorylation of intracellular proteins~~ comprising administering to the individual in need a therapeutically effective amount of a compound as defined in ~~claim 44~~ claim 1.